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ABSTRACT

There are five papers in this collection from the Division of Regional Activities: (1) "Communication and Information in Contemporary African Society" (Bimpe Aboyade), which discusses how libraries can make themselves relevant to other institutions concerned with information transfer; (2) "Libraries and Rural Development: Village Reading Rooms in Botswana" (H. Kay Raseroka), which explores how village reading rooms in Botswana can contribute to rural development; (3) "An Evaluation of a CD-ROM System: Experience of a Compact Cambridge MEDLINE in a Chinese Medical College Library" (Ellen Fan Liu), which finds the CD-ROM system a viable alternative to online or manual searching for students; (4) "Value of Information: Modernization and Economic Problems of Scientific and Technical Libraries with Special Reference to India" (Inder Vir Malhan), which evaluates current and future roles of such libraries, and recommends that library education programs emphasize management in their curricula; and (5) "Impact of Technology on Information Users" (Spanish and English versions; Estela Morales), which assesses the impacts of technology in terms of national development, social class, and users' age and work activity. (SD)

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Brochure 80 / *Booklet 80*

DIVISION DES ACTIVITÉS RÉGIONALES
DIVISION OF REGIONAL ACTIVITIES

SECTION DES ACTIVITÉS RÉGIONALES : AFRIQUE
SECTION ON REGIONAL ACTIVITIES : AFRICA

Session 130 — mercredi 23 août / *Wednesday 23 August* — 09:00 - 11:30

Communication and information in contemporary African society
(10-AFRICA-1-E)

Bimpe ABOYADE, Professor of Library Studies, Department of Library, Archival an Information Studies, University of Ibadan, Ibadan, Nigeria

SECTION DES ACTIVITÉS RÉGIONALES : ASIE ET OCÉANIE
SECTION ON REGIONAL ACTIVITIES : ASIA AND OCEANIA

Session 113 — mardi 22 août / *Tuesday 22 August* — 10:30 - 13:00

An Evaluation of a CD-ROM System : Experience of Compact Cambridge MEDLINE in a Chinese Medical College Library
(21-ASIA-1-E)

Ellen Fan LIU, Professor/Librarian, National Yang Ming Medical College, Shih Pai (Taipei), Taiwan, China

Value of Information : Modernization and Economic Problems of Scientific and Technical Libraries with Special Reference to India
(46-ASIA-2-E)

Inder Vir MALHAN, Reader, Department of Library Science, University of Jammu, Jammu (Tawi), J.K., India

SECTION DES ACTIVITÉS RÉGIONALES : AMÉRIQUE LATINE ET CARAÏBES
SECTION ON REGIONAL ACTIVITIES : LATIN AMERICA AND THE CARIBBEAN

Session 146 — mercredi 23 août / *Wednesday 23 August* — 15:15 - 17:45

Impacto de la tecnologia en los usuarios de información
(6-LATAM-2-S)

Estela MORALES, Directora, Centro Universitario de Investigaciones Bibliotecológicas, Universidad Nacional Autónoma de México, México, D.F.

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Communication and information in contemporary African society : the role of the library

Bimpe ABOYADE, *Professor of Library Studies, Department of Library, Archival, and Information Studies University of Ibadan, Ibadan, Nigeria.*

ABSTRACT

The paper discusses how the Library in contemporary Africa can make itself relevant amidst other institutions concerned with information transfer. It draws attention to the peculiar situation of the African Librarian who has to keep up with space-age developments in communication technologies, as well as tailor his service to the vast majority of the people, who are largely untouched by such developments, but whose need for information is no less critical.

The African Librarian must of necessity modify and expand the traditional methods and clientele of the Library to be able to fulfil its rightful role in communication efforts in contemporary Africa. The RUDIS Library project established by the author in Nigeria in 1981 is used as an illustration as to how one could begin to grapple with this situation.

Introduction

When Julius Nyerere remarked that while others try to reach the moon, Africans are still trying to reach the villages, he was in fact lamenting the inability in this part of the world to effect any meaningful rural development which is the starting point and bedrock of national development. In a way his comment sums up the dilemma of communication agents in contemporary African Society. It is hard enough catching up with new technologies that facilitate communication worldwide. And while one is preoccupied with that, the danger is that communication link with those not yet touched by the new jet age will be almost completely neglected, as it is in fact the case presently.

The communication agent in modern-day Africa thus tries to behave like the mythical Janus. He must keep an eye on those on their way to the moon, as well as reserve the other eye for the majority of his people who are still earthbound technologically and otherwise. These people however primitive, also live in a technological world and they too are constrained to have some understanding of this world if they are to achieve any improvement in their own lives. Along with other forms of assistance to them in this regard, information support activities are essential to arouse a keen awareness and deepen their understanding.

What information does to disadvantaged people in any society is to provide them a second chance of discovering missed opportunities, and enlarge their narrow access to such opportunities. People at the grassroot are at a social disadvantage in many ways, and this situation is further compounded by the fact that they are mostly illiterates. Since they lack formal education which equip other citizens to know how to capture the benefits of government and social amenities like schools, hospitals, housing, water supply, electricity, credit and technical assistance, other remedial measures by way of information provision must be found for them. This will widen their horizon, and increase their ability to make the social contacts, and also create the political impact required to obtain the benefits which others enjoy. A society intent on social justice as a cardinal principle must explore such avenues.

Even for its own self-interest, a government which ensures that the people have access to the type of information that, for example, enables them to avoid the dangers of preventable diseases, will spend much less of its budget on hospitals and health care centres.

Present-day emphasis on rural development in Africa is perhaps the most important step that has been taken in this generation. Rural development being in itself a development package should however embrace far more than the provision of foods, roads and rural infrastructure. For one thing, these provisions cannot possibly go round every community that qualifies for them. For another the promotion of socio-economic equity which such amenities are meant to assist cannot be wholly achieved through such physical measures alone. The people must be helped to realise what the development forces is all about and be encouraged and shown how to participate fully in it. This in fact should be the main goal of the much-talked-about mobilisation of the people from the grassroot.

In this strategy for mobilising peoples the provision of information is crucial. But what type of information, and how is it to be disseminated to those who need it ? In particular, how does the library come in ? Why indeed services to the grassroots when most of them cannot read and write ? Surely the library deals mostly with written documents, and we as librarians are normally trained to handle such materials ? This is a basic dilemma of our profession which cannot be dismissed lightly. If we must serve those at the grassroots in Africa we have to admit that we are making a radical departure from the traditional role of our profession and we should have very good reasons for doing so.

Even though our services are still mainly for those who have the basic skill and education to use the products of written literary, the logic of the trend in liberalising library services, however, is such that no member of society no matter his station in life, should be excluded from them. This is now accepted world-wide in the practise of our profession. The complexity introduced into the new trend for our peculiar African situation is that, unlike Europe and America, our own grassroot people in most cases are unable to read and write for lack of basic formal education. This is the crux of the matter. How we resolve this difficulty will most certainly determine how firmly the library and information profession takes root and flourish in this part of the world.

It is therefore both a matter of showing societal concern as well as a matter of self-interest.

Let me dismiss briefly the question of self-interest. We Librarians like to be well-regarded on society just as other professionals like doctors, lawyers and engineers. These other professionals seem to have earned their recognition because they have proved themselve relevant to the needs of everyone and not just the priviledged minority. The lowliest citizen appreciated the doctor's skill in preserving health and life, and will readily available himself of these services if they are made available to him, and clamour for them if they are not provided. Not so yet for the librarians and his services, until the average persons sees them as serving some of his basic needs. We all know that library matters are still relegated to the background because the majority of the people will not complain if library services are not provided. It is therefore in our own best interest to make our services needed and wanted by the majority at the grassroots, even though they harder to serve.

The larger issue, however, is the moral obligation which a profession has in serving the society in which it exists, to the greatest benefit of all its people. Library services to the grassroots have even become more urgent now that most African countries are addressing the question of national development from the grassroot level. Everywhere one turns now, there is the clarion call to mobilise the grassroots in Africa for development, and the provision of information is at the centre of it all.

Library and information services will surely assist the people to realise their aspirations much more quickly than is possible without their intervention. Provision of information at the grassroots is particularly important so that in a situation where we are all competing for the available scarce resources, the vast majority of people who are at the lower levels may not be open to unbriddled exploitation because of their lack of education and social contacts.

Library's Role

By and large the need for information by everyone in national development efforts is now more widely appreciated. The question for us is whether it is our professionals who should be providing it. My answer is that we are but one of the many groups that should be giving these services, but I see our role as being about the most important.

Modern information activities among grassroot people are already been carried out by a variety of other professionals such as media practitioners, community development workers and agricultural extension officers, to mention some principal groups. So what wole is left for librarians ? Although considerable amount of information now reach the people through these sources, some of my own studies have shown that there are gaps and defficiencies which librarians can best fill, and in a more effective manner. In particular, libraries and librarians are crucial in 1) reinforcement of specific messages already given out through other agencies 2) repackaging of information 3) acquiring and organising specialised materials 4) filling identi-

fied information vacuum and 5) coordinating all information transfer activities among the people.

Public Libraries

In all these our public library system as at presently constituted will need complete overhauling in order to achieve a new orientation of service to the grassroots. Library services would seem to be more meaningful to the average person if it is pursued from the level of the neighbourhood, the community, or the village. With this approach each community or neighbourhood will develop the type of library services that suits and enhances it social goals and development objectives. Whatever services each locality evolves for itself can then be coordinated at the local government level, and further up at the state and national level.

What we have at the moment in Nigeria for example is library development from the state and national levels. In this type of situation, the librarian in charge starts off with what he thinks is good for the people from the height of the state or national headquarters. He then stretches his services as far as they could possibly trickle down within the state, without bothering about the peculiar interests and concerns of particular localities. Such condition is not conducive to making the generality of the people feel a part of the library scene.

Serving a constituency which has never been served before may indeed present some difficulties for us librarians, as this goes far beyond merely establishing branch libraries with the usual library services.

The RUDIS Library Project

I will therefore like to share with you my experience in giving library and information services tailored to the circumstances of a rural community at the grassroots. As part of the RUDIS research project (Rural Development Information System) on which I am working, a pilot library project was started in Badeku village in 1981.

This village is about 17 miles from the University of Ibadan, and is a typical Yoruba rural and farming community with a high rate of illiteracy, absence of many social amenities and an obviously high degree of poverty.

On each visit to the village we took along some creative writings in Yoruba, magazines and comic strips, newspapers, pamphlets, posters and pre-recorded cassettes. We were prepared to give reference and referral services, to read to the people and engage them in discussion, and also make on-the-spot translations of useful pamphlets and news items from the dailies.

We were pleasantly surprised to see that the few creative writings provided were in much demand. There had been several expressions of disappointment by librarians that many Nigerians who were literate did not read for pleasure ; and we had expected that the few books of poetry, plays and novels that we were able to provide would be largely ignored by the mostly illiterate clientele. But once a section of the book was read to them, there were frequent demands to have more and more reading sessions. The villagers also often asked to listen to those we had been able to put on tapes.

For factual reading, the newspapers provided information on current events. The people often asked to know what the papers said about events — mostly political — which they had heard. The pamphlets also gave factual information on farming and health matters. Their use was more often prompted by certain questions from the people which were best answered with the information contained in them.

Posters had been particularly helpful in capturing the interest of those who visited the library. Most of the clientele on entering the centre first looked around at the posters to see if there were new ones that they had not seen. Those who had only just a few minutes to stay were able to derive some information or new experience by looking at them and asking questions about posters which appealed to them. Apart from the visual message, we found that the posters were useful in starting a discussion of interest to those present. This sometimes led us to offer some other information materials, such as pamphlets, for further amplification of the topic or of related topics.

The facility for making reference and referral requests was much used by the people. We were able to answer many of their queries without recourse to expensive reference books. Problems which were beyond our capabilities were taken back to some other specialists for possible solutions which we then took back to the people on our next visit.

From the type of questions asked by the people, we were able to gain some insight into their information needs as perceived by themselves. They asked questions on health related matters, a variety of problems of daily existence especially concerning how to ameliorate the hash conditions of living in a village. Quite expectedly, they sought information on farming problems and other occupational matters on education, religious activities and even leisured-related matters like the results of football games and the progress of local football teams.

Information on government operations was sought all the time. It was generally believed by the villagers that the government was the ultimate source of all amenities and of all the good things of life. It was no wonder then that many questions were followed by the big questions as to what the government was doing about the many problems they faced.

Functional and Non-Functional Uses of Information

The presumption behind the library service project was that the information to be provided had to serve mostly functional purposes — that is aiding people to improve farming, health, increase their knowledge of the wider society, so as to get them fully involved in the process of development. We were however pleasantly surprised that the villagers seized upon other not-so-functional aspects of information use just as eagerly. Sitting down in a relaxed atmosphere and having someone read to them was a completely new experience to nearly all our clientele, which they found most pleasing. In the traditional mode, they were the ones required to retell folktales to children by moonlight. Now they themselves received similar pleasures from modern creative writings. There were demands for more books than RUDIS project could afford, and that was the only limiting factor to this new horizon breaking before people who could not read by themselves.

This is a big reminder that the cultural purposes of a library are not just limited to and appreciated by the leisured and refined members of the society who do not have to spend most of their time, like rural people, just to make ends meet. Reading (or listening) can play an important role in the beneficial use of leisure, in addition to what grassroot people normally do to fill their work-free hours. The library therefore should consciously strive to help such people cultivate a taste for books and reading. Our experience at Badeku shows that the efforts can be very rewarding.

Another important aspect of information transfer among the masses which the pilot project brought to light was the fact that the people could actually go and *seek* the information they needed, rather than wait for someone to offer it. With change-agents like extension workers, community development officers and health officials, their visits were *ad hoc*, and the villagers were gathered together for the occasion to receive whatever information that was brought to them. Again, the villagers were expected to receive and accept whatever information the change-agents thought was good for them — if the information was not considered beneficial they would not be there in the first place. Now the pilot library project offered the people an opportunity to voice out their information needs. It was our considered opinion that they were most likely to utilise such information for their own seeking much better than other types of information reaching them. An institution like the library which was available at regular and specific times would encourage the people to seek information to solve some of their problems, *when* they needed to ; and if they found such information satisfactory, they were bound to be highly motivated in practising self-help and being drawn into the development process.

The one service we did not envisage for the library project was that of a public complaints bureau. But Badeku people (and perhaps like many other people at the grassroots) seemed to harbour in them so much frustration that the library project became a welcome opportunity for expressing it. For one thing, the RUDIS team visited them on a regular basis. For another, they were encouraged by our reference and referral services to express their information needs. In satisfying their enquiries, discussions often ensued, and there seemed no better opportunity than that to complain about some of what they perceived as unfair treatment and deliberate neglect of their village.

Thus a librarian serving grassroots people must be prepared to relate to the people at their level and to accept some

communications role that no other agencies in the community is in a position to accept.

Conclusion

On the whole, experience from the pilot project would seem to indicate great potentials for the library among non-literate grassroot people particularly in the rural areas. Some of the potentials are not even apparent in the conventional library services geared to the needs of the literate and the highly educated. Although the library is primarily based on written literacy, the Badeku pilot project has shown that it can be made to serve information needs of non-literates in many ways that are difficult for other communication channels.

Many African countries are beginning to rediscover the true path to national development though the efforts of the people themselves, and starting with those at the grassroots upwards. Our countries face many social problems of widespread illiteracy, high rates of population growth, poor environmental condition, inadequate food and nutrition standards, a large degree of underutilisation of resources, particularly labour, and a crude level of technology. Our economy is shambles and is just undergoing a painful process of structural readjustment. But deplorable as the situation may be, it is implicity in the very condition of our underdevelopment that there is prospect of further growth and the possible realisation of recognised potential.

This is where we as librarians come in. If we regard information as the energy for driving a social system efficiently, we as managers of information certainly have a central role to play in any development process. We should respond positively to the new focus in Africa on development from the rural grassroots with our own type of information handling skills. This is a great opportunity to revitalise our public libraries in particular.

The recognised capacity of information to facilitate and bring about significant structural changes within a community is what makes it so vital in the development process. It is my firm belief that the library can provide a better and more effective avenue for the information transfer necessary for this process. Let us therefore wholeheartedly welcome this opportunity of a new dimension to our services, and take up whatever challenge it poses with confidence.

21-ASIA-1-E

An Evaluation of a CD-ROM System : Experience of Compact Cambridge MEDLINE in a Chinese Medical College Library

Ellen Fan LIU, *Professor/Librarian, National Yang Ming Medical College, Shih-Pai (Taipei) Taiwan, China*

ABSTRACT

The Compact Cambridge MEDLINE has been put to use in the NYMMC library since Feb. 1988. As the library was the first in the R.O.C. to try MEDLINE on CD-ROM, we decided to monitor uses of the CD-ROM and conducted an evaluation in two stages during the period of about a year. In the first stage, the system was installed for free tests and user responses were gathered mainly to help decision-making on whether an acquisition of the system was necessary. In the second stage of evaluation, data collection stressed on satisfaction level, length of search, fee charge, and problems encountered during searches.

From the study we learn that because of active student uses — 324 recorded searches or 64.8 % of searches, the CD-ROM system proved to be a successful alternative to on-line and manual searches. It provided a highly satisfactory access to biomedical literature to users who might not otherwise conduct a systematic search. We also found that use of English language, a workstation, downloading by floppy disk, and asking a small fee did not hamper uses of MEDLINE on CD-ROM.

INTRODUCTION

The NYMMC library is considered a medium-sized health sciences library in the R.O.C. with a subscription of 910 periodicals and a holding of 36,500 monographs and 2,550 AV titles. It has a staff of seven librarians and six supporting personnel to serve four schools of undergraduate programs and ten graduate departments of which three offer Ph.D. programs.

The Compact Cambridge MEDLINE has been put to use in the library since Feb. 1988. As the NYMMC library was the first in the R.O.C. to try the MEDLINE on CD-ROM, we could not lean on other's experience for decision. The library decided to monitor uses of the CD-ROM and conducted an evaluation in two stages during the period of about a year. In the stage, the system was installed for free tests and user responses were gathered mainly to help decision-making on whether an acquisition of the system was necessary. In the second stage of evaluation, data collection stressed on satisfaction level, length of search, fee charges, problems encountered during the searches.

STAGE 1 — FREE ACCESS

The Compact Cambridge MEDLINE system was first introduced to groups of interested biomedical personnel and librarians from Taipei city at demonstrations in the NYMMC library on Dec. 15-16, 1987. Faculty and student reactions from NYMMC were so enthusiastic that the library agreed to place the system in the library for a trial period of one month. A dedicated workstation was installed for the system in the reference room on Feb. 3, 1988. MEDLINE data bases for 1982-1984, 1986-1987, and Life Sciences Collection data bases for 1982-1983 were made available to all library users during regular library hours. Users were largely self-taught with the help of : 1) user guide prepared by the producer, 2) "help" menus in the system, 3) step-by-step instruction sheet prepared by the reference librarian. A search log, placed by the workstation, was initially used to collect date, name, status, and opinions of users. Due to high demand of CD-ROM searches, the search log was soon modified to schedule appointments to avoid crows at the workstation.

A 10-item questionnaire was also used to gather user responses to the system. Because of Chinese New Year holidays, software and machine break-downs, and a loan of the system to another institution for a demo of 3 1/2 weeks, the trial period was extended to the end of April. On April 21, 1988 a decision to acquire the system was reached and free access to the system was finally extended till the end of May.

According to the search log, a total of 342 users tried the system from Feb. to May 1988 — 270 students, 59 faculty, and 13 staff members. Among the opinions jotted down, 97 urged the library to acquire the CD-ROM databases, while 2 wrote negative opinions. During the same free trial period, a total of 182 questionnaires were completed. From Table 1 we note that questionnaires completed are fewer in number than signatures of users on the search log. In fact the number of actual users should be somewhat more than the signature counts from the search log, since some users did not even sign their names on the search log (Table 1).

Table 1 Duration and Uses of Free Access

1988/ Month	Days System Available	Questionnaires Completed	Signatures on Search Log
Feb.	9½	41	37
Mar.	19½	89	160
Apr.	11	28	44
May	24	24	101
Total	64	182	342

As shown on Table 2, information gathered from the questionnaires seemed to agree with that collected from the search log. It demonstrated again that students made up the largest user group (73.08 %), and that appreciation and approval of the system prevailed (82.97 %). With such popular support, it was without much ado to get college permission to acquire the software and the hardware. One interesting observation is that

out of the total 30 users wished librarians do search for them, 21 turned up in the month of February. The number dropped quickly as time went on. On the contrary, the number of desiring self-search increased as the time passed. Maybe it could be interpreted that experience built up confidence.

Table 2 Summary of Questionnaires of Free Access

Item	Number	%
Campus Users		
Students	133	73.08
Faculty	40	21.98
Staff	8	4.39
Non-Campus Users	1	0.55
Appreciation/ Approval of CD-ROM	151	82.97
Disapproval	1	0.55
No Answer	30	16.48
Search Method		
Keyword	122	67.03
Phrase	12	6.59
Subject	2	1.10
Multiple-Choice Answer	29	15.94
No Answer	17	9.34
Minutes Searched		
Less than 30	102	56.04
31-60	40	21.98
61-90	5	2.75
Over 90	5	2.75
No Answer	30	16.48
Search Result Copied By		
Floppy Disk	147	80.77
Hand Writing	11	6.04
No Answer	24	13.19
Prefer Search By		
Self	123	67.58
Librarian	30	16.48
Both of Above	11	6.05
No Answer	18	9.89

STAGE 2 — FEE-BASED ACCESS

Early in May a draft of regulations on the uses of CD-ROM was approved by the college administration with one major modification. Instead of free access, the administration insisted on charging a fee. The library then decided to continue promotion by providing free access to the CD-ROM databases in May, which would leave some leeway in fully publicizing the regulations to be enforced in June, and better preparing our users for them.

The new regulations require users of the system to get basic training first. Free instructions first to large classes then to small groups of five were scheduled everyday. Users were asked to call for appointment before each use. Each search session was alloted 30 minutes for a nominal fee of N.T. 50, which was about the cost of a lunch at the student cafeteria, or the hourly wage of college student workers. Downloading search results by floppy disk continued from the trial period.

From June to Sept. 1988, questionnaires were used to further study user responses, needs, and problems.

Table 3 Summary of Questionnaires of June-Sept. 1988

Item	Number	%
Campus Users		
Students	68	54.84
Faculty	29	23.39
Staff	21	16.93
Non-Campus Users	6	4.84
Appreciation/Satisfaction of CD-ROM	84	67.74
Disapproval	1	0.81
No Answer	38	30.65
Minutes Searched		
Less than 30	39	31.45
31-60	39	31.45
61-90	6	4.84
Over 90	5	4.03
No Answer	35	28.23
Search Result Copied By		
Floppy Disk	98	79.03
Hand Writing	6	4.84
No Answer	19	16.13

As it is indicated on Table 3, searches dropped sharply in the first months of fee-based access. Because of far-reaching announcements of charging a fee, many users took advantage of the extended free access in May to search MEDLINE databases 1982-1988 and Life Sciences Collection databases 1982-1988. Also the time coincided with the summer months, when most students are away, the library cuts down hours open to the public, and uses of the library are usually low. A few students did complain about the charge of search fees. However, in spite of charging a fee, satisfaction was still high (67.74 %), compared to disapproval of the CD-ROM system (0.81 %). In general, fee-based access was accepted graciously. Many user especially faculty, considered charging a nominal fee as a reasonable means to protect those who have genuine search needs.

From Oct. 1988 to Feb. 1989 the questionnaires were further simplified and used to gather user status, their attitudes toward charging a fee, and abstract copying (Table 4).

Table 4 Summary of Questionnaires of Oct. 1988-Feb. 1989

Item	Number	%
Campus Users		
Students	123	63.40
Faculty	37	19.07
Staff	25	12.89
Non-Campus Users	9	4.64
Abstracts		
Copied	119	61.34
Not Copied	39	20.10
No Answer	36	18.56
Maximum-Fee Granted (N.T.)		
Less than 50	10	5.15
51-100	45	23.20
101-500	31	15.98
Over 500	10	5.15
No Answer	98	50.52

Of the total 194 users, students remained the largest user group. Most users still downloaded abstracts found during their searches. We also observed that once the fall semester started, search activities picked up steadily.

At the end of Oct. 1988, the fact that very low utility of the Life Sciences databases, a tally of 21 total searches with the set, resulted in its cancellation and a renewal of MEDLINE databases for 1989 only.

DISCUSSION

1. Active student uses of the CD-ROM data bases play a key role in the successful introduction of the system in the NYMMC library.

Table 5 A Tally of Users from All Questionnaires

Campus Users		
Students	324	64.8%
Faculty	100	21.2%
Staff	54	10.8%
Non-Campus Users	16	3.2%
Total	500	100%

Table 6 Primary User Constituents of the NYMMC Library

Users	Feb. 1988		Feb. 1989	
Students	1,583	85.61%	1,663	84.50%
Faculty	190	10.28%	229	11.64%
Staff	76	4.11%	76	3.86%
Total	1,849	100%	1,968	100%

A quick scan of Tables 5 and 6 shows that students outnumber faculty by far. Without student users, it would be a very slow and probably wasteful year in terms of the CD-ROM databases. This is especially meaningful after some abortive efforts to implement on-line literature retrieval service due to lack of student support and interest. In 1984 and 1987 two surveys were conducted to determine whether setting up on-line literature retrieval service was viable. About half of the faculty completed the questionnaires and indicated some interest but students showed little or no interest at both surveys. The library decided to drop the plan. For those 60 to 80 faculty who would use the service occasionally, they were advised to use the BRS system at a neighboring library in the Veterans' General Hospital, our teaching hospital with a biomedical staff over 2,000, separated by a few minutes' walk.

2. Charging a small fee does not seem to have great effect on the uses of CD-ROM data bases. As the fee-based access was brought into effect, an initial drop of uses did occur. But after students returned to campus in the fall, searches increased steadily. For the month of March 1989 search sessions rose to 154. Levels of use are generally influenced by events like national holidays, semester breaks, and the influx of new students.

   Using English language does not seem to hamper search by either faculty or students whose mother tongue is Chinese. Conducting searches at a workstation does not seem to intimidate our users. Many users actually welcome the hands-on experience and enjoy search by themselves and getting quick results.

   Downloading by floppy disk is accepted without trouble. The decision was first made to avoid noises from a printer, which would disturb other users in the big open reference area. As many users turn the floppy disk into their own subject profile, some even consider this method advantageous over the printed copies. In case of need, the floppy disk could be printed out in the library office or in the computer center.

3. CD-ROM searches bring users, especially students to the library and stimulate uses of printed reference tools and periodicals. Students no longer regard the library merely as a study hall. Numerous training sessions about use of CD-ROM databases and bibliographic instructions not only establish good relations with users, but they manifest the educational function of the library and make librarians known as information provider.

4. Fourteen users remarked that library collection should be improved. Circulation figures rose since the installment of the workstation, but no voluminous change was observed in interlibrary loan figures. A FAX machine started service in August 1988. It is used mainly for correspondences, business documents, and filling interlibrary loan requests from other libraries. No request was made to other libraries through the FAX for reading materials. It would be interesting to do a follow-up study on use of abstracts found in searches, need and use of full text articles or monographs.

CONCLUSION

The use of MEDLINE CD-ROM databases offers a new alternative to on-line and manual literature searches in the NYMMC library. It provides a satisfactory access to medical literature to users who might not otherwise conduct a systematic search in this Chinese medical college library. Workload and expense incurred with the introduction of CD-ROM databases is compensated by highly positive responses of faculty, staff, and especially students.

Our findings generally agree with those from the summary reports of short-term evaluations, conducted in the Spring of 1988 by American medical libraries and reported at the American National Library of Medicine Evaluation Forum on Sept. 23, 1989.[1]

REFERENCE

1. Summary Reports of the National Library of Medicine Evaluation Forum : MEDLINE On CD-ROM, Sept. 23, 1988, National Library of Medicine, Bethesda, Maryland, U.S.A.

46-ASIA-2-E

Value of Information : Modernization and Economic Problems of Scientific and Technical Libraries with Special Reference to India

Inder Vir MALHAN, *Reader, Department of Library Science, University of Jammu, Jammu (Tawi), J.K., India.*

ABSTRACT

The level of economic support to S & T libraries and information centres with special reference to India is reviewed. The emerging economic problems of libraries have been pointed out and how far users of S & T information make use of existing libraries and information systems' provisions is indicated. The plans and provisions for the networking of libraries through the application of modern information and communication technologies have also been reported. The paper emphasizes the need for management education of library personnel to ensure better utility and expedient management of library and information resources.

1. INTRODUCTION

India's position in the field of scientific and technical research is unique among the Third World countries. "India is categorised as a "super power" among the Third World countries involved in scientific research and eighth in the world in terms of publishing scientific papers"[1]. After Independence, there has been enormous increase in number of scientific and technical institutions, the scientific and technical S & T manpower and the expenditure on research has also increased rapidly. "The national investment on research and development and related S & T activities has been of the order of Rs. 28,656 million or about 1.10 per cent of the GNP"[2].

2. SCIENTIFIC AND TECHNICAL LIBRARIES

The vitality of the S & T, the work efficiency and productivity of scientists and the quality of work performed by them is affected significantly by the operation of the information system. Majority of the scientific and technical libraries in India are financed and managed by the government and the latter is also mainly responsible for funding S & T research in India. A latest directory of scientific and technical libraries lists 1154 libraries[3].

At the national level India has a National Science Library

(NSL), New Delhi ; a National Medical Library (NML), New Delhi and the National Library of India located at Calcutta also has a division of Science and Technology. Now there is a strong demand to convert the Indian Agricultural Research Institute Library to National Agriculture Library of India.

In India, development and improvement of library and information services is now a part of overall national planning. "In 1974, when the first ever science and technology plan was drafted under the Fifth Five Year Plan (1974-79), the role of scientific information was given due consideration. The role of libraries was also reviewed[4]. Under his plan government of India identified scientific and technical information as one of the 22 priority areas in science and technology. The Government of India launched a National Information System for Science and Technology (NISSAT) aimed at improvement of resources of S & T libraries and information centres and their integration into a national system. With the introduction of NISSAT in 1977, India became the first developing country to adopt a national plan for scientific and technical information. The Sixth S & T Plan (1980-85) also stressed the need for harnessing information for various scientific and technical activities. The NISSAT programme also continued under the 6th and 7th Five Year Plans. In March 1984, the Planning Commission appointed a Working Group on Modernization of Library Services and Information. The purpose of this Group was to formulate proposals for the Seventh Five Year Plan (1985-90) indicating priorities, policies and financial costs. The Planning Commission has now constituted another working group to suggest to the government suitable measures for the development and improvement of library and information services. This group is supposed to make suggestions and recommendations for the library and information provisions for the Eighth Five Year Plan. The Government of India has devised a separate policy for libraries i.e. National Policy on Library and Information System.

2.1 Computerization and Networking of Libraries

With the availability of CDS/ISIS software package from the Unesco through NISSAT, a number of S & T libraries in India have computerized various library operations. Under the auspices of NISSAT a number of training courses have also been organized in various parts of the country to train the professionals regarding the use of CDS/ISIS package. In 1978 INSDOC started providing computerized SDI service for Chemical Abstracts and INSPEC using CAN/SDI software. The University Grants Commission (UGC) provided an assistance of Rs. 10 million to establish a National Centre for Science Information (NCSI), at the Indian Institute of Science (IISc), Bangalore. This centre provides SDI service to researchers in universities using CA, BIOSIS, INSPEC, GEOREF and MATHFILE databases. The National Information Centre (NIC), New Delhi has set up a biomedical information centre for Indian Council of Medical Research (ICMR). This centre namely NIC-ICMR Centre on Biomedicals provides SDI services and information services using MEDLARS and POPLINE databases. "The libraries of the Bharat Heavy Electricals Limited (BHEL), Hyderabad ; the Reactor Research Centre, Kalpakkam, the International Crop Research Institute for Semi-Arid Tropics (ICRISAT), Hyderabad ; and the Steel Authority of India (SAIL), Ranchi are making use of online facilities"[5]. The National Aeronautical Laboratory (NAL), Bangalore had an online link with ESA/IRS databases though INTELSAT. However, this facility was discontinued with effect from April 1988 because it was not cost effective.

The National Chemical Laboratory (NCL), Pune ; BHEL, Hyderabad ; the Regional Research Laboratory (RRL), Trivandrum, have been using the DIALOG system of the USA, through normal telex lines. The Informatics (India) Pvt. Ltd., Bangalore is an Indian agent of DIALOG system and this firm has provided demonstrations at various places regarding online use of DIALOG. Keeping in view the market potential in India a few software companies have also started the supply of software for library and information purposes. "Since the cost of dedicated international telecommunication line is very high NISSAT decided to adopt dial up mode. As per the scheme five NISSAT Access Centres to International Datacentres (NACID) are being set up"[6]. These centres are being set up at INSDOC, New Delhi ; NCL, Pune ; NAL, Bangalore, Central Leather Research Institute (CLRI), Madras and Indian Association for Cultivation of Science (IACS), Calcutta. "The NACIDS would use normal PSTN lines with ISD facility or go through INDONET system of Computer Maintenance Corporation, Limited (CMC), Hyderabad and the international gateway set up by Videsh Sanchar Nigam Limited at Bombay thereby avail of the packet-switching facility"[7].

A few institutions in the country receive secondary information services on CD-ROM, e.g. INSDOC, New Delhi; National Institute of Oceanography (NIO), Goa; NIC-ICMR Centre on Biochemicals, New Delhi. "In order to support the trend, NISSAT has established a CD-ROM information centre at NAL, Bangalore in 1988. The Centre would provide information on hardware and their suppliers, reference tools and databases on CD-ROM and technology trends.."[8]. Since the hardware for CD-ROM use is not very costly the CD-ROM products may be very useful for the Indian S & T libraries and information centres.

Three main national level network systems planned in India are NICNET, INDONET and VIKRAM. The NICNET is countrywide network being developed by the NIC, New Delhi. This network system will facilitate transfer of information mainly for government departments involving all the districts of India. The INDONET is the commercial computer network being developed by CMC, Limited, Hyderbad. The VIKRAM is the public data network system to be developed by the Department of Telecommunications, Government of India. With the development of such networks S & T information tools may be available online. The INSDOC has transferred its revised version of National Union Catalogue of Scientific Serials in India (NUCSSI) on megatapes and developed the database which will ultimately be accessible online. "Both NICNET and INDONET have undertaken exercises to put the NCICCSI database online"[9]. To encourage resource sharing among S & T libraries NISSAT has planned CALIBNET and DELNET at Calcutta and Delhi respectively. The CALIBNET network will provide linkage among S & T libraries at Calcutta and DELNET has been planned for S & T libraries at Delhi. Another significant development in the area of networking of libraries is the planning of INFLIBNE, which will interlink the university libraries and libraries of important institutions, laboratories, etc., This would cost RS. 2,000 million. The VIDYANET is another proposed computer network which will interlink the academic and research institutions of excellence within the country. It will also help the elite institutions to establish links with similar networks abroad e.g. European Academic Research Network, Geneva. Configuration of the proposed VIDYANET is given in Figure 1.

2.2 Economic Problems of Libraries

The majority of scientific and technical libraries receive low priority in their budgets. The expenditure is usually below the standards recommended for the purpose. Further, the expenditure on staff development is quite low compared to library collections and development of other resources. A study[10] of random sample of 26 libraries indicates that only one library spends a little more than six per cent of their institutions budget on the library (Table 2). In a research laboratory, expenditure on staff salaries, physical plant, equipment, consumables is no doubt important but lack of adequate support for information services may impair the research activities. Effectiveness of library and information services is largely dependent on the finance available.

In India the majority of the scientific and technical literature is received from the developed countries. The increasing prices of reading material and foreign exchange fluctuations frustrate the efforts for development of suitable collection. It is simply not possible to increase the library budgets annually to cope up with the increasing prices of reading material. Scientists neither have special research grants to purchase the reading material nor can themselves afford to purchase the costly books and reports they urgently require. Hence they have to mainly rely on the library to meet their information requirements. Non-availability of suitable information may delay a research programme or it may lead to duplication in research. Due to inadequate information support, the hardworking researchers in the developing countries have to make enormous effort and spend considerable time in gathering relevant information. If the salaries paid to research staff are taken into consideration, the time and effort involved in information gathering entail substantial cost. Therefore, planning information services in the developing countries should constitute as one of the important area of economic planning of scientific and technical research activities.

The scientific and technical libraries in India get finance from the institutions which the libraries serve. The extent of assistance to the library depends upon the institution executives interest in developing the library resources and services. The

budgeting and accounting methods followed by institutions have to be adopted by their libraries. There is no national level directive issued by government as to how much per centage of the institutions budget a library should spend and under what situations a library should be considered for a special grant or additional financial assistance for resource building. The guidelines for library expenditure are also not readily available keeping in view the current needs. As a result of institutions control for library finding and lack of directives and standards, the libraries get insufficient financial support. "According to a study about 146 scientific and technical libraries in India had a total budget of Rs. 4,60,81,889."[11] This study revealed that a small number of libraries constitute a major part of library expenditure, while a large number of libraries do not make adequate financial provisions for library services. Under the provisions of the NISSAT plan a selection of libraries in important areas e.g. Drugs, Machine Tools, Food, Leather, Chemical Sciences, received financial assistance to strengthen their libraries and information resources and services. The philosophy behind this plan as originally envisaged was to detect gaps in the libraries, fulfil them and to integrate the libraries into a national information system. Even after 10 years of execution a number of libraries are not able to provide reasonable information resources for their institutions research staff.

3. INFORMATION USE

Information is though considered as a valuable resource, the researchers in the developing countries are relatively not so much aware of the real role of information in the research activities. Lack of competitive situations and proper research environments do not encourage increasing use of information in the developing countries. In India even the existing resources of scientific and technical libraries remain underutilized. The number of scientists making use of libraries at any given time seem to be meagre if the strength of scientists employed for research is taken into consideration. Similarly the average number of reference queries received, ILL records of libraries also indicate that scientists do not properly avail of even the existing services. A study[12] regarding the average number of daily reference queries received by 110 libraries shows that on an average a total number of 1935 queries were being received by all the 110 libraries. Moreover, 50 per cent of the queries were received by just 18 per cent of the libraries. Even the resources and services of prestigious national libraries such as NSL, New Delhi, NML, New Delhi are not properly utilized by scientists. For example, only a few daily queries are received by NSL, New Delhi, NML, New Delhi and average number of daily visitors is also not commensurative to the national status of these libraries. A look at the annual reports and records of Indian National Scientific Documentation Centre (INSDOC), New Delhi indicate that document copies supplied, bibliographies compiled and translations undertaken for the scientists every year are more or less constant during the last 20 years. However, the number of scientific institutions, the number of scientists in India increased during the last 20 years and hence the collective overall information needs also increased. The underutilization of resources of existing libraries and information centres is mainly due to lack of concern for information. Several scientists make use of information only to complete some assigned work and not as a regular habit of keeping in touch with the latest literature in their subject fields. Some of them have the traditional belief that the literature searching will be required when the experimental work is over. "The AGRIS inputting centre at Delhi formerly used to provide SDI services to a number of agricultural scientists in India, but due to the lack of scientists' interest, this service is now being rendered only at the institutional level"[13].

Keeping in view the above situation, the atmosphere for marketing of library services is not presently viable in India. It has been experienced that users are not prepared to make use of the services if the service are priced. The INSDOC used to provide computerized SDI services to about 250-300 scientists for CA and INSPEC databases using CAN/SDI software. Initially the services were given free of cost and once the service was priced the demand for service considerably slashed. The INSDOC administration has to reconsider its decision and offer free service for some more time. Keeping in view the users and their parent organizations inability to pay for the services and users' interest in making use of the services only if they are not priced, the UGC financed NCSI at IISc, Bangalore has not priced its computerized SDI services. Under these circumstances it can be hoped that such services will not be self-supporting in the near future. The costly users' information services are expected to continue so long as they get the support of their funding bodies. The online facility at NAL, Bangalore for using ESA databases discontinued because of exorbitant cost of dedicated communication line. A few institutions which make use of DIALOG pay for the searches undertaken for their research staff. There are only few libraries in India which can afford to undertake costly information searches from international databases.

CONCLUSIONS

Scientific and technical information can play more important role for the developing economies but an average user in the developing countries is less cared of information. Various information use observations indicate that a typical information user in the developing countries pays less attention to current information and the information use is tardy. Due to import of technologies and lack of internal competitiveness and challenging situations, there is lack of concern for information. The research environments, bureaucratic barriers and users inability to pay for information are the other factors which influence the endeavour of information search and also the per capita use of information.

As far as the governments's awareness regarding the value of information is concerned, Indian position is somewhat different from the other developing countries. In India, the library and information services at least figure in the process of national planning, the relevant policy document has been issued by the government, the NISSAT plan is in existence and the country is aware of the need for modernization and networking of the libraries. Moreover, manpower is available to run the conventional systems, as well as to adopt modern information and communication technologies for development and operation of modern information communication systems.

The library and information services infrastructure in India is however not comparable to the size of S&T manpower and S&T libraries can be considered to be resourceful enough to organize excellent library and information services. Paradoxically on one hand some of the libraries are not resourceful enough to meet the basic information needs of users on the other hand modernization of libraries is being undertaken. Though libraries are not able to get a reasonable finance from their institutions budgets to organize the traditional services, yet government is planning massive financial investment for the networking of libraries. This raised the issue whether India should improve the traditional library services or undertake modernization of libraries through the application of modern information technologies. A country like India requires both and best possible utilization of the existing resources.

There are some problems in the acquisition and adoption of modern technologies too. For instance the acquisition of CD-ROM systems in India are subject to customs clearance and involve high rate of excise duty. The sponsoring bodies of modern information systems cannot be self-supporting for quite some time. The moment the fees are imposed they may run the risk of underutilization and if underutilized the purpose for which they are designed may not be served well. The object of developing modern information systems through the computerization and networking of libraries will be fulfilled only if the funding bodies provided recurring grants for the maintenance and operation of these systems.

The library personnel in the developing countries are facing several challenging situations such as increasing prices of reading material, non-availability of reasonable funds, adoption and adaptation to new technologies, underutilization of libraries, increasing needs for resource sharing, etc. Moreover, most of literature is received from the developed countries. These problems and new needs have implications for the library and information science education and training. To fulfill the evolving new requirements for manpower, library schools must emphasize management education in the course curricula.

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6-LATAM-2-S

Impacto de la tecnología en los usuarios de información.

Estela MORALES, *Directora, Centro Universitario de Investigaciones Bibliotecológicas, Universidad Nacional Autónoma de México, México, D.F.*

RESUMEN

En el trabajo se cuestiona si realmente existe este impacto, el momento de impacto en la sociedad y su repercusión en la Biblioteca como parte de esa sociedad.

Se relaciona el impacto de la tecnología con el estrato social, la edad y la ocupación ; asimismo se destaca la importancia de — tomar en cuenta el tiempo y el espacio en que es válido hablar de impacto.

También se establece una relación entre las partes de la sociedad que reciben este impacto, el hogar electrónico, la electrónica y la computación en la educación, la investigación y la administración como usuarios permanentes de technología, y la tecnología y los servicios de información.

Por último se ve como del impacto se pasa a la cotidianidad y de ahí al hábito ; como se ha utilizado el témino impacto y el uso — de tecnología, con fines económico-sociales, labores políticas y técnicas.

De impacto y tecnología se habla en diferentes medios sociales y profesionales, tanto técnicos como científicos y humanísticos ; y por supuesto que ya es un tema común en la literatura relacionada con información, y de manera más precisa se habla de impacto de nuevas tecnologías, en usuarios de información. Para hablar de este tema habría que precisar conceptualmente términos como "impacto" y "nuevas tecnologías" o simplemente "tecnologías" ; ya que hace muchos años que los venimos usando, y esto me lleva a pensar que el impacto del que hablamos es algo excepcional que se ha prolongado por tantos años que, ha dado una nueva característica de tipo permanente e inherente a nuestra sociedad actual : la de "sociedad impactada". Por otro lado también ya tenemos muchos años que usamos el descriptor "nuevas tecnologías" y me preguntaría ¿qué tan nuevas ?, o ¿cuáles son las más nuevas ?, la generada hace diez años, la de hace cinco, o la de ayer. Y ante la reiterada frase, "impacto de nuevas technologías" creo que estamos haciendo uso de una licencia poética aplicable a aconteceres de hace más de una década.

La definición más común de impacto es el efecto de una fuerza aplicada bruscamente ; también es la impresión que un acontecimiento o discurso produce en las personas o en la opinión pública.

Table 1. Ranking List of Combined Resources of Each 12 Libraries from Minimum to Maximum

Books	Bound Periodicals	Current Periodicals Subscribed
4331	225	85
14377	2141	342
28170	5619	613
38691	10972	747
49626	20329	963
59036	31822	1162
74986	47262	1434
92586	57206	1695
117564	73628	2068
144086	94955	2546
206637	126168	3039
314044	197132	4100
942996	637977	5893
—	—	17479

Source: Inder Vir Malhan: Ph. D. Thesis, Panjab University, Chandigarh, 1988, p. 32

Ahora bien, el efecto de la fuerza o la impresión que se produce va a variar o se va a ver afectada por el entorno socioeconómico, político y técnico, de quién recibe la fuerza e impresión. Por lo que el impacto de una tecnología va a depender del entorno social en que se de, de la tradición histórica y cultural de cada pueblo, y de las características específicas de cada individuo en cuanto a edad, ocupación y clase social.

El impacto como tal se da en un tiempo y en un espacio determinado ; este impacto puede ser el producido por la noticia de una masacre, por la aparición de una nueva tecnología o una tecnología diferente, el uso de una nueva máquina o un nuevo dispositivo. El primer encuentro con la noticia, con la tecnología o con la máquina, antes desconocida, ahora una innovación tecnológica, puede producir un impacto, después despertar curiosidad, presentarnos el reto de descubrirla y saberla operar, despertar nuestro interés por tocarla, por manipularla. Del impacto pasamos a la seducción y de ésta a la costumbre de tenerlo, de operarlo, de tomar posessión de él a través de nuestros sentidos, y más tarde sin mucho esfuerzo llegamos al hábito, a la disposición de hacer algo, disposición adquirida por actos repetidos.

El camino del impacto al hábito nos obliga a pensar en la transitoriedad de lo que nos rodea, de que lo nuevo, después de un tiempo deja de ser nuevo ; que lo que nos impactó ayer después de un año de uso no nos causa la misma sensación ; aún la nueva tecnología que nos puede impactar, se usa, se consume, se rechaza o se acepta, nos envuelve y nos atrapa, y no siempre para crearnos problemas, al contrario, muchas veces para solucionarlos algunos de ellos[1].

Los vuelos orbitales de Yuri Gagarin en 1961 y el alunizaje del Apolo XI en 1969[2], nos impactaron y mantuvieron nuestra atención minuto a minuto mientras duraron los vuelos ; las conquistas espaciales han continuado y la sociedad común está acostumbrada a ellos. 25 años después, los viajes espaciales son más sofisticados y con grandes avances científicos y tecnológicos detrás de ellos, sin embargo sólo son una noticia más entre otras que pueden ser las novedades del momento.

Table 2: Percentages of Institutions R & D Budgets Spent by Libraries

Sr.No.	Percentage of R&D Budget Spent on the Library	Number of Libraries
1.	0.50 to 0.99% of R&D	4
2.	1.00 to 1.99% of R&D	5
3.	2.00 to 2.99% of R&D	6
4.	3.00 to 3.99% of R&D	1
5.	4.00 to 4.99% of R&D	4
6.	5.00 to 5.99% of R&D	7
7.	6.00 to 6.99% of R&D	1

Source: Inder Vir Malhan: Ph.D. Thesis, Panjab University, Chandigarh, 1986, p. 87.

La tecnología electrónica incorporada a la industria automotriz, impactó en su momento a obreros y usuarios, hoy en día es una rutina de trabajo para el obrero, y para el usuario son comodidades que él disfruta y que espera sean superadas en cada nuevo modelo.

La electrónica, las telecomunicaciones y la informática han adquirido carta de naturalización en la Banca y si al principio se contó con la resistencia del empleado bancario y del cliente ; ahora se demandan cada vez más estos servicios automatizados y de teleproceso a los que ya estamos habituados.

El impacto no se ha mantenido por diez años sino que después del impacto inicial se vivieron los efectos y las consecuencias, y se han desarrollado nuevas formas de trabajo y de conducta. La conjunción de Tecnología y adecuada organización del trabajo nos permite reducir tareas repetitivas, mejorar la gestión interna de un proceso, compartir con el cliente o el usuario parte del proceso y ofrecer y recibir más y mejores servicios personales y colectivos.

La tecnología útil a los servicios de información, en la medida que la usamos y la manipulamos se nos vuelve cotidiana ; es importante que esta tecnología nos entre por los sentidos que se de el paso que va de la idea de equipo o de la máquina en abstracto, a la realidad concreta que se pueda sentir, ver y tocar ; y aquí incluimos al usuario que la quiere conocer hasta sus últimas consecuencias, para con ella diseñar servicios de información y también incluimos al usuario que sólo la utiliza como medio que le ofrece un servicio, como puede ser una base de datos.

El impacto de la tecnología, que se utiliza para el manejo de información, (una variada gama de computadoras y videos) se da primero en la sociedad en general, el niño o el adulto se expone a ella la mayoría de las veces en su casa, en la escuela, en la tienda. La tecnología de la información apoyada en la electrónica y en las telecomunicaciones se ha integrado a la sociedad a través de dos de sus instituciones más representativas : la familia y la escuela, que hace que esta tecnología se vuelva de uso común y doméstico.

La tecnología de la información y de la comunicación, se ha instalado en casa por iniciativa de los padres o de los hijos, el uso familiar y masivo de ella la ha desdramatizado, a extremos de que en algunos hogares se habla de una dependencia y una adicción, claro que en otras ocasiones se obtiene una computadora como signo de estatus o como inversión futura para las nuevas generaciones.

La Escuela es una contraparte importante en el papel que juega la familia como usuario cotidiano de esta tecnología de la información. La escuela estudia la informática en si y la usa como apoyo al proceso educativo de casi todas las áreas del conocimiento propiciando una enseñanza más personalizada y más activa utilizando entre otras sus posibilidades de simulador de otros muchos procesos. La actitud favorable y positiva de padres y educadores, desde hace ya varios años aunque sea para buscar un estatus social[3], no nos permite hablar de impacto eterno, sino de consecuencias de la tecnología y su proyección hacia el futuro.

Paralelamente al hogar y a la escuela, el impacto de la tecnología de la información también se da en la oficina, en el cubículo, en el laboratorio ; y no necesariamente el primer encuentro se da en una Biblioteca o Centro de Información con la consulta a bases de datos o la búsqueda de información. Es más, los niños y los estudiantes de hoy piensan encontrar una pantalla de video y teclado en toda biblioteca, no se cuestionan si debiera estar o no estar.

La participación de los niños y los jóvenes en el uso de esta tecnología a través de los juegos y sus ejercicios escolares, desmitifica la tecnología de la información.

Claro que todo esto dependerá del país, del tipo de sociedad, del tipo de usuario ; del nivel tecnológico del país y del grado de masificación y popularidad de la propia tecnología. Cuando un niño tiene en su casa acceso a la tecnología procedente de la microelectrónica, la utiliza en el aula desde la educación elemental ; cuando el estudiante universitario tiene una microcomputadora como parte de su material didáctico ; y cuando el investigador está rodeado de tecnología, ya no se va a impactar cuando la utilice en la operación de bases de datos y en el procesamiento de información ; el impacto se dió muchos años atrás.

Esta adecuación de la tecnología, da matices a la duración del impacto y sus efectos ; por supuesto que estos variarán entre países desarrollados y países en desarrollo, entre países de economía capitalista y países de economía socialista.

En la URSS, donde parte de su idioscincracia de pueblo socialista es la correspondencia entre problemas teóricos y científicos con las necesidades de la vida social para conformar el bienestar nacional[4], el uso de la tecnología de la información tendrá connotaciones diferentes a Inglaterra y los Estados Unidos, no veremos la computadora en el hogar, pero si encontraremos estos equipos en centros de reunión colectiva, para hacer un uso compartido de los equipos, la juventud quizá no tenga a opción a mil y un juego, o a los mismos juegos de otros países, pero seguramente le ofrecerán otras variantes.

Estas diferencias no las provoca la propia tecnología, ni del gusto y actitud del usuario, sino las restricciones políticas, legales, económicas e ideológicas ; pero la actitud positiva, de participación y de adopción de niños y jóvenes y la participación de los adultos[5] : es aplicable en uno y otro lado del planeta.

Esta participación e interacción de los niños y los jóvenes es importante destacarla porque es algo que no se vió en otras revoluciones tecnológicas de décadas pasadas, situación que ha hecho que el impacto que produce la aparición y uso de una nueva tecnología, como las de uso actual, procedentes de la microelectrónica sea breve, se diluya, se absorba rápidamente por el núcleo social al cual se incorpora.

En la tecnología de la información, quien diseña software o bases de datos de una manera profesional vive al ritmo del desarrollo technológico y de la innovación, por lo tanto no puede diseñar "para siempre" "para toda la vida", diseña en función del equipo del momento ; y el productor de equipo no produce máquinas desechables en un 100 %, sino que incluye en el nuevo equipo elementos mejorados y dispositivos con puntos de correspondencia que faciliten la incorporación y aprovechamiento de todo el trabajo procesado en el equipo anterior. Aunque se dice que somos una sociedad de consumo de artículos desechables, esto no quiere decir que en cada nuevo equipo, en cada nuevo modelo estamos desechando el conocimiento anterior y que estamos viviendo revoluciones tecnológicas diariamente, por lo contrario estamos aprovechando todo el conocimiento y técnica ya adquiridos y probados, solo los enriquecemos y los mejoramos ; y precisamente por aspectos de comercialización y de mercado, se tiene que ofrecer continuidad en los procesos de producción a los clientes, y todo nuevo equipo ofrece nuevas ventajas, pero a la

vez la posibilidad de aprovechar lo hecho en el equipo predecesor. Ahora la exigencia y deseo del usuario la anticipa el productor.

En los inicios de la tecnología de la información se aprovecharon los equipos existentes y el servicio de información se adecuaba a la máquina ; ahora el productor está alerta y atento a las necesidades de un gran sector que procesa información de diferentes tipos y en una amplia gama de posibilidades y nos ofrece productos que pueden resolvernos problemas que antes sólo deseabamos resolver.

La tecnología ha superado con creces las manifestaciones sociales, el grado de automatización de nuestra sociedad alcanza niveles significativos a partir de los años 60 con el desarrollo de la microelectrónica, la Universidad Nacional Autónoma de México en 1988, celebró 30 años de computación en México, la aparición de la computadora data de 1952 y otros equipos posteriores de hecho son variaciones sobre el mismo tema, por lo que la nueva tecnología ya no parece ser tan nueva ; por otro lado el número de computadoras en hogares, en fábricas, en bancos, en tiendas, en universidades, es impresionante, al igual que la disponibilidad en el mercado ; el gasto de la industria de la programación en los Estados Unidos en 1981 fue de 6,000 millones de dólares y para 1988 se estima en 34,000 millones (lo que equivale a una tasa de crecimiento anual del 65 %) y encontramos una microcomputadora por cada ocho americanos. En México el gasto significa actualmente alrededor de 200 millones de dólares con una tasa de crecimiento del 30 % anual[6]. En España, la banca a incrementado el numero de cajeros automáticos en 270 % en 4 años, y las microcomputadoras se instalan en 300,000 hogares en dos años[7]. Estas cifras son indicadores de una masificación de la technologia, por lo que el impacto se diluye, o se dió sólo en ciertos momentos y en ciertos casos, dudo mucho que se pueda hablar de un impacto permanente y total.

La tecnología nos ha afectado en nuestra vida cotidiana, laboral y profesional : tenemos acceso a culturas y paises que nos quedan a miles de kilómetros de distancia, se favorece la producción masiva e industrial con el procesamiento de grandes volúmenes en menos tiempo, nos podemos comunicar adelantos de investigación y trasmitir cantidades de inversiones multinacionales en la banca.

En nuestra área de estudio se propicia y beneficia el procesamiento de grandes volumenes de información, se favorece una variedad de procesos de alto grado de dificultad con una considerable reducción de tiempo : técnicamente podemos tener acceso a todo tipo de información independientemente del lugar donde se procese. Y se espera que la demanda para proceso de información se incremente dramáticamente, a la par de las actividades sociales e industriales que se harán más sofisticadas, por lo tanto la producción de software será más urgente y rápidamente estaremos usando la 5a. generación de computadoras[8].

Hay un gran intercambio de conocimientos, de experiencia y tecnología, pero no como transplantes de paquetes, sino con la creatividad que demanda con sistema económico y la propia geopolitica[9], e independientemente del sistema económico esta situación produce movimientos homogenizadores de problemas y de sus respectivas soluciones en contraposición de la satisfacción de deseos personales o artesanales de piezas unicas.

A varios sectores de la sociedad les ha convenido hablar y recrearse con el "impacto de las nuevas tecnologias", pero las más de las veces por razones ajenas al proprio impacto, sino como medio para obtener otros beneficios colaterales, por ejemplo :

a) La clase directiva a veces utiliza la inclusión de la tecnología de la información para impresionar a un sector de su comunidad ; para mejorar su estatus social y profesional ; para crear una imagen de actualidad ; para justificar incrementos en presupuestos de operación.

b) La clase trabajadora para solicitar incrementos de salario, para una reclasificación del puesto y para ascender en la escala laboral y social.

Obreros y empleados, al verse sujetos y objetos de cambios de rutinas, flujos de trabajo y esquemas organizacionales, por la llegada de la tecnología, en las primeras fases de su uso y a los primeros cambios de esquemas, se resiste, porque todo cambio implica un esfuerzo, un cambio de rutina, la llegada del nuevo equipo implica aprender algo nuevo, quizá más cómodo, más fácil, pero no deja de ser algo nuevo. Después del impacto, de los primeros coqueteos, del conocer con los sentidos el nuevo equipo, la technologia atrapa al usuario, porque algún beneficio le reporta en su trabajo diario, y por supuesto también a la institución ; y en ese momento empezamos a fabricar un mito, porque como grupo social nos conviene.

Como grupo y como individuo se nos fabrican temores y expectativas que la fuerza de la repetición, y el poder de las masas nos va hacer adoptar el temor y la expectativa ; nos recuerdan la historia y nos hacen sentir que podemos ser parte de la historia futura. Por un lado nos atemorizan con el desempleo que produjo la Revolución Industrial, y por otro nos hacen creer que con el sólo hecho de utilizar un nuevo equipo, nos gradua en una nueva procesión.

Sin embargo la experiencia en varios paises con diferente nivel de desarrollo nos revelan que la informatización, la inclusión de la technologia de la información no siempre ha sido causa de desempleo, lo que si ha originado es una alteración en el tipo de empleo y un cambio la estructura de la plantilla de personal ; ya que las nuevas actividades o las actividades modificadas que impone la tecnología, la mayoria de las veces pueden ser realizadas por el mismo personal, previa capacitación.

Aunque la tecnología reduce y libera del trabajo rutinario y permite el incremento de volúmenes de producción ; también hace posible que parte del personal atienda aspectos de calidad del trabajo y ocasiones de difusión y divulgación del propio trabajo.

La plantilla de personal no sólo se reestructura por que cambien de actividad o modifiquen su actividad los componentes de ella ; sino también cambia la propia composición, ya que en muchos casos se abre a puestos nuevos, casi siempre cubiertos por jóvenes, que generacionalmente están más cerca de la tecnología y más abiertos a la innovación ; otro aspecto seria que al elevar el nivel tecnológico de un proceso, o de una compañia también se amplia el abanico de categorias ocupacionales[10].

Por todo lo anterior no podemos decir que las nuevas tecnologias sean destructoras de empleo y causa de desempleo, pero lo que si cabe precisar es que su inclusión en la institución no va a garantizar incrementos económicos "per se" ya que un empleado puede desarrollar una tarea con el mismo grado de difficultad y el mismo esfuerzo con o sin tecnología, lo que va a variar y mejorarse es el proceso en su conjunto y los productos obtenidos. Cuando el sindicato sólo ve la tecnología como un medio para asegurar el puesto y la progresión fácil de salarios es cuando viene el conflicto y le conviene hablar de "impacto".

Pero al llegar a este punto ya estamos hablando de efectos y consecuencias de la technologia, no de impacto, y a esta lista podriamos agregar un sinnúmero de problemas laborales que se dan, dada la masificación de la tecnología y la cotidianeidad de su uso ; situaciones que ya son representativas dentro de la problemática laboral en sus aspectos sociales, psiquicos y médicos.

A este respecto podriamos mencionar como ejemplo :

La inseguridad tanto laboral como fisica : la primera ante una necesidad de capacitarnos en nuevas habilidades o rescatar las que supuestamente habiamos adquirido y con el tiempo hemos perdido : como puede ser la velocidad de lectura que requiere con pantalla de la terminal ; la segunda, la fisica se está presentando con los efectos de la luz y rayos electromagnéticos sobre el cuerpo humano ; y asi vemos que están tomando carta de naturalidad en la salud laboral y como causas de ausentismo y enfermedad : problemas de vista por la digitación y lectura que demandan las terminales de video, problemas de columna por posturas inconvenientes ante equipo instalado en mobiliario inadecuado ; problemas psiquicos y de viedo-dependencia, y al parecer también incidencia en un porcentaje considerable de abortos. Según The Federal Office of Technology Assessment OTA de los Estados Unidos, la principal causa de problemas de salud laboral es la derivada del uso de esta tecnología[11], cabe aclarar que esto se debe a que una gran cantidad y variedad de actividades han incorporado esta tecnología a muchos de sus fases industriales o administrativas.

Dada la masificación de esta tecnología de la información, la inter-acción con la sociedad y la escuela y la activa participación de niños y jóvenes, no se puede hablar de impacto por tiempos tan prolongados, pero si de que esta tecnología ha penetrado en el ser humano más profundamente que las precedentes y que cada vez más se legitima como un signo de nuestro tiempo : con la caracteristica especifica de que cada

país, cada institución y cada individuo se comportará diferente al recibir, adecuar o rechazar una misma tecnología[12]. La misma tecnología no tendrá los mismos efectos en dos diferentes organizaciones.

Existen también algunas tendencias de la sociedad de tipo general que expresan todos los pueblos y cuyas variantes solo serán de matiz o de profundidad y que la tecnología sólo ha acelerado su efecto como pueden ser :

— La búsqueda de libertad de información y el libre acceso a ella ; pero a la vez la protección de la privacidad de información personal.

— La participación de niños y jóvenes como elementos dinámicos y factores de cambio de una sociedad.

También hay otras tendencias que se han propiciado con el uso de la electrónica y las telecomunicaciones como :

— La preferencia a actividades que propician la individualización y privatización en detrimento de la vida social y uso de los espacios públicos.

— La convivencia simultánea de los fenómenos de homogeneidad cultural actual con la diversidad de expresiones simbólicas y culturales.

— La dependencia ante un estímulo tecnológico que puede llegar a ser fuente de contaminación.

El centro de atención no debe ser la tecnología "per se", las personas, los individuos no deben ser ignorados o puestos en segundo plano[13], ya que los cambios en la tecnología no necesariamente dan cambios revolucionarios en la sociedad pero si inciden en la conducta de los individuos y después de un tiempo en la sociedad como conjunto.

La tecnología, la "nueva tecnología" ni se convierte, ni reemplaza a la ideología, no es el objetivo, es el medio para lograr ese objetivo, por que aunque estimula la innovación y la creatividad de unos, en otros casos inhibe la creatividad de grandes sectores de la población. El entusiasmo y obediencia de la población a las tecnologías casi siempre está condicionada a las gratificaciones y beneficios que van asociadas a ellas. Si la tecnología permaneciera inmutable, su incidencia en grandes grupos de población disminuiría o desaparecería ; y ya hubiese sido puesta en tela de juicio[14].

La tecnología impacta al especialista en información y al usuario de ella por un tiempo cada vez más breve, ya que el productor y/o creador de este tecnología cada vez más piensa en su usuario, se preocupa por él, y se anticipa a sus preguntas, los nuevos equipos "casi se operan solos", uno solamente "aprieta el botón" la magia está "tras bambalinas".

El ser humano, el usuario de la tecnología, el usuario de información, cada día exige más y se asombra menos, llega ver lo más natural que cada 24 horas se produzca algo nuevo, algo que superó a lo producido ayer.

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LIBRARIES AND RURAL DEVELOPMENT:

VILLAGE READING ROOMS IN BOTSWANA

By

H. Kay Raseroka

The Library, University of Botswana

GABORONE, BOTSWANA

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TO THE EDUCATIONAL RESOURCES

LIBRARIES AND RURAL DEVELOPMENT: VILLAGE READING ROOMS IN BOTSWANA.

by H. Kay Raseroka

Introduction

Numerous articles have been written about the inappropriateness of existing library servics to provide for the needs of the majority of third world populations (1). The oft mentioned factor which militates against relevance of these libraries is illiteracy whether it be caused by a lack of reading skills or it be related to an ability to read only in a language which is not a vehicle for socio-economic activities. Yet one of the assumptions on which libraries are established are literacy and the printed word packaged in a book form and written in a language of commerce. Libraries are generally not seen or used as a vehicle for information delivery regardless of packaging hence they miss, in the delivery of their service, the majority who depend solely on oral transfer and aural reception of information for their own development.

Generally, then, libraries in developing countries have served national development best as an educational support (2). The significance of this service as a resource for development lies in the broadly held belief that education is the best vehicle for rapid national development for nations which have attained independence in the recent past. Libraries then are seen as an indispensible complement to education: as a means of maintaining literacy and encouraging life long self development through reading. How succesful libraries have been in this role is a question worth studying. For the purpose of this paper, however, suffice to note that since most educational institutions, especially at the secondary and tertiary levels are based in urban areas or large villages public libraries have tended to be located in these areas to the neglect of rural areas. Considering that over 75% of the population of the developing world lives in rural areas, it is not surprising that there is increasing

concern and demand for libraries to respond to the needs of the rural areas from most developing countries and in Botswana which is the focus of paper.

The purpose of this paper is to explore the degree to which the Village Reading Rooms (VRR) in Botswana can contribute to rural development. In the process the context in which they exist is discussed and relating them to rural development as a strategy for national development and a policy of the Government of Botswana.

Section 1 will give the country background and the role of library services since independence.

Section 2 will define rural development generally and discuss rural development policy in Botswana.

Section 3 will present the Village Reading Rooms. Finally the degree to which VRRs can contribute to rural development will be discussed.

4. Background

The Republic of Botswana has been independent since 1966. The country's land area is 582 000 km^2 and is about the size of Kenya or France. It shares borders with the Republic of South Africa and Zimbabwe in the South and East; Zambia and Namibia on its north and west. According to the 1981 census, it has a population of 967311 which is expected to reach 1356941 by 1991. The population density was 1.62 persons per square kilometre in 1981 compared to the world average density of 33 persons per square kilometre in 1980. The highest density is along the eastern escarpment where most of the urban areas and large villages are located and is lowest in the rural areas. Within the latter, those areas with relatively good soil and water resources have a higher density. The population density of settlements in the rural areas generally varies seasonally as inhabitants move between ploughing areas, growing lands and homesteads in villages on the one hand and between rural and

urban areas on the other or across international borders to seek employment in South Africa. Such movements patterns are a result of a climate which is characterised by cyclical drought periods; influences agricultural activities, and occupation patterns of 83% of the population and therefore affect the country's rural economy in general.

On the basis of this density factor, library services in Botswana have, over the page twenty years, been sited in densely populated urban areas and large villages. These would generally have educational institutions and sizeable settlement of civil servants or business communities, who are literate in English, the official language, and perceive libraries as important for educational advancement. Annual reports on library services over this period indicate that the major users of libraries are children and school going youth (3). A recurrent concern has been how best to serve remote rural populations considering infrastructural constraints of sandy roads, sparse populations and limited financial and human resources. Mobile libraries were attempted but their effectiveness was hampered by an undeveloped rural road infrastructure; book box services were introduced as service to primary schools and were utilised not only by pupils but also by adults.

The degree to which the latter service contributed to rural development was, however, dependent upon the understanding and commitment of teachers (who operated these) to availing the service to all who needed it. Further the book box collection is extremely limited both in content and quantity thus this service, as a contribution towards rural development, is severely restricted. The experience of using schools as a base for a library service seems to have provided ideas for development of a service which attempts to serve rural populations and contribute generally to rural development. Before discussing this contribution, it is useful to discuss rural development as a concept and the strategies which have been used to promote it.

Rural Development

Rural development has become a dominant phrase in the National Development plans of the third world. It is however difficult to find a single interpretation of the phrase. The persistent interest in rural development is owed to the fact that the location of the majority of the population is the rural areas; that they are dependent on agriculture for their livelihood and by their sheer numbers in relation to the total population affect the economies of their countries positively or negatively depending on their success in their agricultural activities. Definitions of rural development depend on approaches to it or strategies for the improvement of the lives of rural populations.

The several schools of thought on rural development and have been summarised by Sterkenberg (4) thus: as those which perceive rural development as being equal to:

- growth of agricultural outputs through better allocation of resources.
- improvement of the welfare of the community by providing service facilities.
- the satisfaction of basic needs of the rural population by creating programmes of employment, better nutrition, housing etc.
- structural transformation of rural society through for example land reform and the resultant fundamental change in rural power structure.
- an integrated process for achieving higher living standards through giving attention to interrelationships between individual activities, sectors,areas and institutions in the development process.
- decreasing the income differential between rural & urban dwellers.

Such classifications evolve from experiences and attempts to address the issue of rural development by different approaches and countries as determined by government policies for national and rural development. A definition which is generally agreed upon is that the objectives of rural development should include balanced social and economic development, with emphasis on equitable distribution" (5).

Botswana's rural development policy has evolved over the past sixteen years and has been influenced by factors such as: the sparseness and remoteness of its populations in most of rural Botswana; the need to provide 'welfare' social service infrastructure in these areas as a base for the long term development of a strategy for the creation of employment opportunities to service these areas adequately. Thus the policy has sought to "promote an integrated approach to development between sectors" and maximise benefits through the use of extension services which include health, education non formal education, agriculture, libraries etc.

Libraries and Literacy

The need for the library service in Botswana to address the issue of literacy and make its services accessible to the majority of its population had been discussed without succesful implementation (6) (Nkabinde) for over a decade. In a country where the base for rural development is a sectoral programme approach the lack of liaison at the practical level can be detrimental to progress either through duplication of effort or counter-productive activities or neglect of pockets of target groups by all sectors. In the case of literacy and library service the most serious problem has been a neglect of group needs of new literates by the library service and an attempt by the Department of Non Formal Education (DNFE) which is responsible for literacy programmes to create its own reading rooms as part of post literacy services (7).

In 1985 a national conference on libraries and literacy (8) brought together the Botswana National Library Services (BNLS) DNFE and other extension agencies to discuss the role of libraries in literacy and forge links which would be a base for dialogue between BNLS and DNFE. It recommended the creation of village reading rooms which would be a joint venture between BNLS and DNFE; introduced the concept of a "barefoot librarian" who would be part of a community served, and who would manage the reading room, and assist new literates with their reading and information needs. It further recommended the incorporation of BNLS into the national Rural Extention Coordination Committee (RECC) a structure which facilitates liaison and promotes cross sectoral planning and is the national base for an integrated approach to rural development.

The membership of the BNLS in the RECC is, in principle, significant: RECC is an official forum for interaction by the various sectors which serve the rural areas through specific programmes; it is a base which may be used for coordination and planning for cooperation cross sectorally and provide a source of information necessary for support of projects targetted to communities being served. Ideally RECC should facilitate a holistic approach to the planning and implementation of sectoral programmes for rural development. Whilst the former seems to be taking root, implementation is still offered in isolation according to the specific programmes. The recommendation for a linkage between literacy and library services, then was seen as a vital first step towards coordination of service in the interest of communities served.

In discussing the needs to facilitate rural development as a whole and involving all sectors and target groups Mchombu (1988) (9) identifies eight types of information relevant for the rural development process:

- literacy and educational information
- appropriate technology information
- government policy information
- information on economics and cottage industries

- information on crop production and animal husbandry
- information on health
- cultural information
- rural development planning and management information arising out of accumulated experience of rural population.

The ideal service provided by libraries (as a vehicle for information which meets the needs of the communities they serve) would be to supply all these types of information categories. Libraries, however, have yet to take bold steps towards meeting all these information needs adequately by providing appropriate information, at suitable levels and based on objective analysis of community needs. Traditional library services have opted for a cautious approach as manifested by a choice of services related to education where assumptions on needs are easily justifiable.

The support of literacy by the library service in Botswana in co-operation with DNFE, therefore can be seen as an extension of its basic philosophy of complementing education and providing preventative measures against illiteracy (10). Thus endorse the generally held view that literacy and therefore education is one of the main factors for improvement of the quality of life and for national development. At another level, however, this partnership provides a first, vitally important step into the cooperative arena where negotiation and compromise is the only way to achieve stated objectives for the benefit of a shared client.

Village Reading Rooms

Twenty Village reading rooms (VRR) were established as a pilot project in 1986, located in one district which is located in a relatively densely populated part of Botswana. The choice of the villages was based on an informal assessment of needs for post literacy reading materials by literacy programme officials. Ten additional VRRs are being established in at least one village in each of the remaining districts

The commitment to expand the VRRs is based on the recommendations of the evaluation study (11) of the pilot project which stated the following:

> "Judging from the data of usage and impact it is clear that the VRR project is viable and needed by the village community. It is, therefore, recommended that the VRR Pilot project be gradually spread to the rest of Botswana"

The extension of the VRRs pilot project to other districts will be helpful in the identification of factors under which a VRR is most likely to serve the needs of the different communities. An important question, however, is on what basis are the villages in which the VRR is to be sited selected? Are they selected only on the basis of post-literacy needs? If literacy concentrates only on the reading writing and numeracy and post literacy; strengthens these skills exclusively, then the role of the VRR may become an extention of the study room leading to further education. Such a development is probable if one considers that 97.6% of a sample of learners surveyed by a recent evaluation study wish to continue with formal schooling (12).

The VRRs, however, seek to meet broader needs. The question is how succesful are they likely to be? The following discussion is based on the evaluation study (11) which, although carried out rather too soon (6 months) after the establishment of the VRRs, nevertheless gives some indicators for future developments of the VRR.

OBJECTIVES OF THE VRR

The objectives of the VRR are the promotion of the reading habit; being information centres which are a forum for exchange and acquisition of a wide array of information (such as governmental developmental and general information) as well as being cultural centres and a store for Setswana literature. These objectives are generally in keeping with those of a traditional library but have been broadened to accommodate innovative use of the reading room as cultural centres where dance and discussion may take place. A striking feature of the objectives is the apparent

incompatibility between the envisaged role of a cultural centre and that of a reading room although in practice these, of course, could be scheduled for different times.

The role of the VRR as a forum for exchange of information between government officials and the community is ambitious but well worth promoting given the sectoral approach to extension work which compete for time and energies of rural communities. The success of such a coordinating role of the VRR is strongly dependent not only on the dynamism of the Reading Room Assistants, (RAA) and the commitment of the support system available to them from both library and literacy services in the district and national levels, but also on the cooperation among extension agents in addressing identified needs of the community. The latter has been found to be sadly lacking. Although structures such as the village development committees (VDC) exist as machinery for the communities' participation in decision making on areas affecting their lives (e.g. VRRs) it has been found that the membership of such committees is not representative. A study (13) of rural local institutions found that "many village committees have been established by government extension workers and are not necessarily based on any needs perceived on expressed by villagers". Thus if the base for activities provided by the VRR is dependent on VDC decisions only, it will be imposing official perceptions rather than identified needs of the communities served. In the absence of reliable sources of information on needs, it is necessary, therefore, for the Library Service to engage in research on these or analysis existing baseline studies which provide information about each community which is a target for VRR establishment. Such studies will facilitate an understanding of patterns of life, economic activities, channels of communication and an identification of gate keepers of information. Analyses are essential if the VRR services are to be tailored to the peculiar needs of each community served. An understanding of channels of communication and the role of gate-keepers of information is a branch on which the new information sources have to be grafted if the new is to take to and service the local environment. Utilisation of such home grown systems would be invaluable in the creation of

relevant libraries which are an engine for rural development.

The Reading Room Assistant

The strategy for staffing the VRR is that RRA should be drawn from the community served. The benefits derived from this choice are based on an assumption that the RAA is involved in the day-to-day activities of the community thus is in a position to utilise "indigenous" knowledge and to understand information needs of the community, thus able to provide suitable materials and service. In some cases RRAs have been literacy teachers and are familiar with the requirements of the post literacy stage. The most pronounced rationale, however, is one of economics: the RAAs are paid an honorarium in keeping with the 'self-help' philosophy upon which the VRR projects are based (such as communities providing physical facilities with limited help from the BNLS which fits electric or photovoltaic lighting).

The average qualification of the RAAs is seven years of education and their training in VRR management stresses "rudiments and techniques of operating and running the reading room". When the objectives of VRR are related to the skills and training of the RRA it is not surprising that the majority of RAAs did not favour helping the semi-literate which they regard as demanding. The role of facilitating the use of the VRR as "a forum for exchange of information between government personnel and the community to enhance participatory planning implementation and feedback..." is one which not only demands that the RRA be a skilled, confident communicator, but also occupy a position of status and authority within the community or possess a knowledge base on the varied sectoral activities which is equivalent to or above that of extension agents who are government personnel serving the community.

In discussing community information services Kempson (1986) puts forward a number of requirements which information workers need to meet if they are to serve communities well. Such authority is necessary for persuading the community and extension workers to perceive the - VRR as an instrument innovativeness:

attributes which depend among other things on commitment, enthusiasm sound training and a high level of consciousness of the role of information in development.

The paper posits that information workers must; (among other things):

- understand the information that they are handling i.e. be able to discuss their subject with confidence and authority.
- help individuals and groups to act (where necessary) on the information that has been supplied.
- be accepted as part of the community they serve.

These may be based on a model from a developed world but I consider them relevant in principle (if not by level) to information workers in rural communities in the third world.

The RRAs may be capable of meeting all these criteria only in so far as the semi-literate groups are concerned and in those areas covered by the literacy materials. Thus the VRR goals of being information centres and for exchange of information are not realistic unless there is ongoing support from district and national library service centres.

Users

The VRR users have been found to be predominantly primary school students. This pattern is in keeping with the experience of the library service in general, though, perhaps the reasons may be different. Factors which have a bearing might be related to the location of the VRR (primary schools which are therefore associated with children) on the fact that VRR are seen to be for supporting literacy activities or the hours during which the reading rooms are open might not be suitable to most adults, or a combination of all these factors. The most important factor however is related to the type of material available in the VRR. Although documents in the VRRs are colour coded for ease of reference for users and assistants, problem is related to

inadequacy, the lack of variety, unsuitable levels of content and quantities of available materials. Although there is an attempt to collect, at suitable levels, materials produced by all government departments but only one copy of each is available in each reading room. Materials written in Setswana at the level of a new literate are not produced in adequate numbers. Though materials are selected for readability by new literates in both Setswana and English the latter seem to predominate, thus are attractive to primary school students who are keen and able to read English.

Conclusion

The VRR as it exists at present seems to be a replica of the public library in the urban centres perhaps reduced in scale. It addresses rural development generally from a top to bottom planning mode rather than that which is based on the understanding of the information needs of the community it serves. Possible innovations related to the VRR as a cultural centre are more rhetoric than reality at present. Perhaps in the future, based on lessons learnt from the cooperative activities which library services have embarked upon, linkages may be formed with the museums educational activities which are visual and extend people's understanding and appreciation of the world around them and of their fields of interest and creative skills (15). Linkages with museums would be a more meaningful way of strengthening the cultural role of libraries since bridges would be built between the old and 'new' information sources.

The establishment of electrified or photovoltaic lit VRRs should be seen a springboard for the usage of audio visual based information services, and information collection from indigenous sources on all spheres of activities in which rural societies engage in. As has been often stated 'the death of an old man or woman is a loss to the culture & history of a group'.

Another possible area of involvement by the RRA is the replay of popular broadcasts for the benefit of the community at large. As established through the nation wide survey on radio listener-

ship study (16) it is clear that rural communities depend for information on radio broadcasts covering agriculture health and social welfare. Yet access to radios is affected by numerous factors ranging from unsuitable times of broadcast and ownership of a set to the cost of batteries. The availability of radio set and play back facilities in the VRR would be one service which can serve as a stepping stone to the fulfilment of the most important goal of the VRR: information centre and a forum for exchange and debate of issues affecting the lives of individuals between the community and government personnel: The VRR would be meeting an identified need. A critical issue would be to identify free time slots available to the majority in relation to the patterns of occupation and life.

In all these activities the Reading Room Assistant is the linchpin for the effectiveness of libraries in rural development. The question is: what training is available for this linchpin to be versatile enough to meet the varied levels of demand placed on it? What support can it expect from the centre?

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The impact of technology on information users.

by

Estela Morales

Director

Librarianship Research Center

Universidad Nacional Autónoma de México

México, D.F.

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THE IMPACT OF TECHNOLOGY ON INFORMATION USERS.

ABSTRACT

The paper asks the question whether or not the impact is real, how long the effect of this impact lasts in society and what are the consequences for the library.

It presents the impact at the technology and development level of the country, the social class, and the user's age and work activity.

Also it examines the relation among electronic and automation in the home, in education and the school, and the daily use of technology in research and administration and the relation between all of these aspects and information services.

The last part of the paper reviews the use of the word impact with different purposes: economic, social, political, and technical.

ESTELA MORALES
CUID/UNAM
MEXICO

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IMPACT OF TECHNOLOGY ON INFORMATION USERS

Impact and technology are spoken of in different social and professional contexts as much technical as scientific and humanistic and of course they are a common theme in the literature related to information, and more precisely put there is talk of the impact of new technologies. In order to speak of this subject, it would be necessary to specify conceptually terms such as "impact" and "new technologies" or simply "technologies" since for many years we have been using them and this takes me into thinking of the impact that we are talking about is something exceptional that has been prolonged for so many years that it has given a new characteristic of a permanent nature and inherent in our present society: the "impacted society". On the other hand we also have for many years been using the descriptive term "new technologies" and I would like to ask, But are they so new? or Which are the newest? those generated ten years ago, those generated five years past or those of yesterday. And before the reiteration of the phrase, "impact of new technologies", I believe we are making use of a poetic license applicable to occurrences of over a decade ago.

The most common definition of impact is the effect of a force applied brusquely; also it gives the impression of an event or course produced in individuals or in public opinion.

Now, the effect of the force or the impression that is produced is going to vary or is going to be seen as affected by the socio-economic, political and technical background from which it receives the force or impression.

Therefore the impact of a technology is going to depend on the social background in which it occurs, the historical and cultural tradition of each country and the specific characteristics of each individual in respect to age, occupation and social class.

The impact as such occurs in a determined time and place; this impact can be produced by the news of a massacre, by the appearance of a new technology or a differing technology, the use of a new machine or a new device. The first encounter with the notion, with the technology or with the machine, unknown before, now a technological innovation, may produce an impact, after that it arouses curiosity, presents us with the challenge of discovering it and of knowing how to operate it, awakens our desire to touch it, to manipulate it. From the impact we pass to the seduction of it and from this to the custom of having it, of operating it, of taking possession of it through our senses and later without much additional effort we reach the habitual, the disposition of accomplishing something, something acquired by repeated acts.

The route of impact on habit, obliges us to think of the transi-

toriousness that surrounds us of the new, but after a time it no longer is new. That which impacted us yesterday, after a year's use no longer causes the same sensation. Even the new technology that could jar us, is used up, consumed, rejected or accepted, wraps us up or ensnares us and not always to create problems for us but on the contrary, many times to solve some of them[1].

The orbital flights of Yuri Gagarin in 1961 and the landing on the moon of Apollo XI in 1969[2], absorbed us and maintained our attention minute by minute while the flights lasted. The space flights have continued and society in common is accustomed to them so that 25 years after, a space flight more sohisticated and with greater scientific and technological advances behind it, is only one more piece of news for us that would have been novelties at the moment.

The electronic technology incorporated into the automobile industry, at that time an impact on workers and users, today is a routine job for the technician and the user who enjoys that convenience thanks to this innovation and awaits more changes and new accomodations in each new model.

Electronics,telecommunications and informatics have acquired the letter of naturalization in banking and if at the beginning they encountered resistance from the banking employee and the client, now the demand is increasing for automated services and

teleprocessing to those which we have become habituated and await more, new and better services in our benefit.

Impact was not only maintained for ten years but after the initial impact the affects and consequences lived on and new forms of work and conduct have been developed which permit us to reduce repetitive tasks, better the international measures of a process and offer more and improved personal services; or through devices that have become common and domesticated even though behind the curtain great technological efforts are included.

The useful technology of information services, in the measure that we use them and manipulate them, become easy for us; it is important that this technology enter our senses, that it is given promotion that goes from the idea of equipment or a machine in the abstract to concrete reality that can be felt, seen and touched. And here we include the user who desires knowledge of it up to the final consequences in order that he can design information services. Also we include the user who alone utilizes it as a medium that offers he or she services as might be a data base.

The impact of technology that utilizes for the mangement of information (a varied range of computers and videos) occurs first in society in general. The child or the adult is exposed to it, the majority of times at home, in the school, in the shop. Information technology supported in electronics and telecommunications has

been integrated into society through two of its most representative institutions: the family and the school.

This information and communication technology has been installed at home by initiative of parents or young people; the familiar and massive use of it has been overdramatized. There are extremes which in some homes speak of a dependency and an addiction. Naturally in other occasions a computer is acquired as a sign of status or as future investment for coming generations.

The school is an important counterpart in the role that the family plays as daily user of this information technology. The school itself studies informatics and uses it in support of the educational process of almost all areas of knowledge propitiating a more personalized and active teaching technique, utilizing among others, its possibilities as simulator of many other processes. The favorable and positive attitude of parents and educators for a number of years in the past, although aimed at a search for social status[3], does not permit us to speak of eternal impact, but of consequences of technology and its projection into the future.

As regards use of information technologies and communication, the school reinforces the family attitudes and conversely.

Parallel to the home and the school, the impact of information

technology also occurs in the office, in the cubicle, in the laboratory, and not necessarily the first encounter occurs in a library or information center using a data base for searching for information. It is more today's children and students who think of finding a video screen and keyboard in every library; they do not question whether it should be or not.

The participation of children and young people in the use of this technology through games and school exercises takes the mythology out of technology and information.

Naturally all this depends on the country, the type of society, the type of user; of the technological level of the country and the grade of the masses and popularity for its own technology. When a child has at home access to the technology proceeding from microelectronics, utilizes it in the schoolroom from the elementary school on; when the university student has a microcomputer as part of his didactic material; and when the researcher is surrounded by technology, then there is not going to be any impacting when he utilizes it in the operation of data bases and the processing of information; the impact occurred many years ago.

This adaptation of technology, the combination of the duration of the impact and the effects naturally will vary between developed and developing countries, between countries with a capitalist

economy and countries with a socialist economy.

In the Soviet Union, where a principle of its idiosyncracy as a socialist country is the correspondence between theoretical and scientific problems with the necessities of social life in order to conform national welfare[4], the use of information technology will have different implications than in England and the United States. We will not see the computer in the home, but we will find this equipment in collective meeting places for making partnership use of equipment. Perhaps the youth do not have options to all kinds of games or the same games of other countries, not because of political, legal, economic and ideological restrictions. Yet the characteristic that is applicable in this or that side of the planet is a positive attitude of participation and adaptation by children and young people and with some level of participation of adults[5].

This participation and interaction of children and youth is very important because this is something which was not seen in other technological revolutions in past decades, a situation which has made an impact that produces the appearance and use of new technology. As in present usage, it issues from microelectronics, its stance is brief, diluted, absorbed rapidly by the social milieu into which it is incorporated.

In the technology of information, for whom data bases are designed in a professional way, he or she lives at the rhythm of technological development and innovation. For this reason he or she cannot design a thing "to last always", "for a lifetime", but designs with equipment as it is at the moment. The producer of equipment does not produce machines 100% discartable, but includes in his new equipment improved elements and devices with points of reference that facilitate their incorporation into previous equipment or the use of all processed work proven in previous equipment. Although it is said we are a consumer society of disposable goods, this does not mean that in each new machine, in each new model we are disposing of past knowledge and that we are living technological revolutions daily, for to the contrary we are employing all the knowledge and techniques acquired and tested. We only enrich them and make them better and precisely for commercial and market aspects. Continuity in production processes for clients are offered and all new equipment provides new advantages, yet at the same time the possibility of making improvements on those made in preceeding equipment. Now the demands and desires of users prompts the producer.

In the initial stages of information technology, existing equipment was taken advantage of and the information service adapted to the machine. Now the producer is alert and attentive to the necessities of a large sector which processes information of dif-

ferent types and in a wide range of possibilities and offers us products that can solve problems that formerly we only wished we could solve.

Technology has surpassed greatly social manifestations. The grade of automation in our society has reached significant levels from the sixties with the development of microelectronics. The National University of Mexico in 1988 celebrated 30 years of computation in Mexico. The appearance of the computer dates from 1952 and other equipment after that really are only variations on the same theme, since the new technology does not appear to be new. On the other hand the number of computers in homes, in factories, in banks, in shops, in universities, is impressive, the same as the availability in the market. The expenditures of the programming industry in the United States in 1981 ran to 6 hundred million dollars and for 1988 it is estimated in 34 hundred millions (the equivalent to a rate of annual increase of 65%) and we find a microcomputer for every eight Americans. In Mexico the expenditure means that at present around 200 million dollars is spent with an annual increase of 30%[6]. In Spain, the banks have increased the number of automized cashiers in 270% in 4 years and microcomputers have been installed in 300,000 homes in two years[7]. These figures are indicative of a mass development of technology, for which the impact is being resolved, or only in certain moments and in certain cases has occurred. I doubt very much that we can

talk of a permanent and total impact.

Technology has affected us in our daily lives, working and profes sional: we have access to cultures and countries which are located thousands of kilometers distant. Massive industrial production is favored with the processing of large volumes in less time. We are able to communicate advances in research and quantitative multinational investments in banking.

Within our area of study, the processing of great volumes of information have been propitiated and benefitted. A variety of processes of a high grade of difficulty with considerable reduction of time has been favored. Technically we have had access to every type of information independently of the place where it was processed. And it is hoped that the demand for processing of information will increase dramatically, on a level with social and industrial activities which will become more sophisticated. For this reason the production of sofware will be more urgent and soon we will be using the 5th generation of cumputers[8].

There is a great interchange of knowledge, of experience and tech nology, without package transplants, but rather with the creativity that is demanded of an economic system and one's own geopolitics[9]. Independently of the economic system, this situation produces similar movement in problems and respective solutions in compari-

son with the satisfaction of personal desire or craftmanship of unique parts.

In various sectors of society, it has been convenient to speak and entertain ourselves with the "impact of new technologies"; but the majority of times for reasons beyond the said impact, with consequences regarding the use of the technology and utilizing this as medium for the obtaining of other collateral benefits, as for example:

a) The managing class at times utilizes the inclusion of information technology in order to impress a sector of the community, in order to improve its social and professional status, in order to create an image of timeliness, in order to justify increased operational budgets.

b) The working class, technicians and employess, in seeing themselves objects of changes in routines, work flows and organizational schemes, with the arrival of technology, in the first phases of their use and in the first change of schemes, tend to resist them because the change implies an effort, a change of routine. The arrival of new equipment implies learning something new, perhaps more accomodating, easier, but it does not change from being new. After the impact, in the first flirtations of getting to know the sense of the new equipment, the technology

ensnares the user, because some benefit is reported in his or her daily work and of course also in the institution. At this moment, we begin to fabricate a myth, since as social group we are in accord.

As group or as individual we fabricate fears and expectations. The force of repetition and the power of the masses is going to make us adapt to the fear and the expectation. We remember history and we are made to feel that we will be able to be a part of future history. On the one hand we remember the unemployment that the Industrial Revolution produced and on the other hand we are made to believe that with the sole fact of utilizing a new equipment, that it is a good pretext for us to be paid more and initiate demands for salary increases, a change of name of the activity. For example, to run one's fingers over the keyboard of a computer instead of a typewriter could be the motive for a demand for job reclassification in a firm.

Without a doubt the experience in various countries at different levels of development reveal to us that informatic growth, the inclusion of information technology has not always been the cause of unemployment. What it has originated is an alteration in the type of employment and a change in the structure of the duties of personnel, since new activities or modified activities impose a technology in the majority of cases that can be realized by the

same personnel, after a training period.

Although the technology reduces and liberates us from routine labor, it permits an increase in the volume of production. It also makes possible that a part of the personnel can attend to work quality and on occasion can diffuse and spread the benefits of its own work.

The staff not only changes its structure because of a change in activity or a modification of the components of the activity, but also changes its composition, since in many cases new jobs are opened, almost always covered by young people that generationally are near the technology and more open to innovation. Another aspect would be of elevating the technological level of a process, or of a company which also amplifies the spread of occupational categories.

For all the previous reasons, we cannot say that the new technologies will be destructive of employment and the cause of unemployment, but what can be said is that the inclusion in an institution does not guarantee economic increment "per se" since an employee may be able to develop a task with the same effort with or without technology. That which is going to vary and improve is the process as a whole and the products obtained. When the labor union sees technology only as a means of securing a job and the

easy progression of salaries, this is when a conflict occurs and it is convenient to talk of "impact".

However at the reaching of this point, we are talking of effects and consequences of technology, not of impact and to this list we could add a great number of labor problems that occur, given the massive advance of technology and its daily use, situations that are representative within the labor problematic in its social, psycological and medical aspects.

In this respect we could mention for example:

1.- The insecurity, at the same time pertaining to the labor aspect as well as the physical aspect, the first before a necessity of training in new abilities or rescuing what supposedly we had acquired and with time lost, as velocity of reading that requires display upon a screen.

2.- The scrend, the physical aspect, is presented with the effects of light and electromagnetic rays over the human body. Thus we see that we are becoming cognizant of the physical health of labor and of causes of absenteeism and illness, visual problems due to fingering and reading that is demanded of video terminals, back problems due to inconvenient postures before equipment installed in inadecuate furnishings, psychological problems and video-depen-

dence and apparently also the incidence of a high percentage of abortions. According to the Federal Office of Technology Assessment (OTA) of the United States, the principal cause of problems in the physical health of labor is derived from the use of this technology[11]. It should be made clear that is owing to the large number and variety of activities that this technology has incorporated into many of its industrial and administrative stages.

Given the wide utilization of this information technology, the interaction with society and the school and the active participation of children and youth, we cannot talk of impact for such prolonged periods, but that this technology has penetrated into human beings more profoundly than in preceeding periods. Each time it proves more legitimate as a sign of the times with the specific characteristic of each country, of each institution and of each individual behaving differently at receiving, adapting or rejecting the same technology[12]. The same technology with not have the same effects on two differing organizations.

There exist certain tendencies in society of a very general type that are expressed in all countries and whose variants will only be in shadings or intensities and that technology alone has speeded up these effects, such as the following:

- The search for informational freedom and free access to it; but

at the same time the protection of the privacy of personal information.

- The participation of children and young people as dynamic elements and factors of change in a society.

There may be other tendencies that have been propitiated with the use of electronics and telecommunications such as:

- The preference for activities that make for individuality and privacy in detriment to social life and use of public spaces.

- The linking simultaneously between the phenomena of present day homogeneity coupled with the diversity of symbolic and cultural expressions.

- Dependency upon a technological stimulus that could become a source of contamination.

For wich reason the center of attention should not be technology "per se". Persons, individuals should not be ignored or consigned to a secondary level[13] since the changes in technology do not necessarily result in revolutionary changes in society but influence individual conduct and after a time in society as a whole.

Technology, new technology neither is converted nor replaces ideology. It is not the objective; it is the medium to reach that objective, because even though it stimulates innovation and creativity in some, in other cases it inhibits the creativity of large sectors of the population. The enthusiasm and obedience of the population to these technologies is almost always conditioned by gratifications and benefits associated with them. If technology remains unchanged, if it influences large groups of the population and if the gratification were to diminish or disappear, technology would have been placed in jeopardy[14].

Technology impacts the information specialist and the user of it for a time in each case more briefly, since the producer and/or creator of this technology each time thinks more in the user. He or she is preoccupied by the user and anticipates his or her questions. The new equipment almost operates by itself. One only has to push a button. The magic is "behind the scenes".

The human being, the user of the technology, the user of information, demands more each day and is surprised by less. He or she gets to see the most natural that every 24 hours might produce something new, something that surpassed that which was produced yesterday.

Estela Morales
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